REMARKS

Claims 1-10 and 28-30 are pending. Claims 11-27 have been canceled without prejudice. Claims 1, 29 and 30 have been amended. Support for the amendments is found throughout the specification and are depicted in the drawings. Reconsideration of the rejection is respectfully requested.

Claims 1-10 and 28-30 were rejected under 35 USC 112, second paragraph as being indefinite by claim 1 allegedly being incomplete for omitting essential steps. The Examiner contends that fluid will flow down the solid phase without sedimenting the particles without a missing step. This rejection is respectfully traversed.

The sedimentation chamber is filled with fluid to a point at least above at least part of the slanted solid phases. The sample will not simply flow through an empty chamber. This is clearly shown in Figure 2. To prevent any possible misunderstanding, claim 1 has been amended so that the invention may not be misused contrary to the teachings of this invention in a manner suggested by the examiner.

Claim 1 was also considered indefinite as to the what particles bind to which binding agents since there are multiple binding agents. This rejection is respectfully traversed. Each binding agents may or may not bind to some of the particles present in the sample. Depending on the nature of the particles in the sample, some, none or all may bind to each of the binding agent(s) present. The differential binding is desirable as a diagnostic tool to distinguish certain particles from other particles. Accordingly, this rejection should be withdrawn.

The examiner also notes that the "second slanted solid phase" in line 12 lack antecedent basis earlier in the claim. Claim 1 has been amended to overcome this rejection. Claims 29 and 30 were also amended accordingly.

Claims 1-10 and 28-30 were rejected under 35 USC 103 as being unpatentable over Suovaniemi in view of Anderson et al ('834). Suovaniemi was cited as showing agglutination assays where agglutination is visualized as coating the entire slanted bottom surface while lack of agglutination results in the cells (or other particles) sedimenting to the very bottom of the cuvette. The examiner contends that the slanted portion of the

cuvette may have specific antigens or antibodies attached thereto to adhere the agglutination complexes more firmly. Anderson et al was cited to show using density gradients and ultracentrifugation to separate microorganisms in an ultracentrifuge tube having a slanted surface. From these references, the examiner concludes it prima facie obvious to concentrate the particles over a slanted solid phase. This rejection is respectfully traversed.

Neither reference alone or in combination is even attempting to perform the present invention. Suovaniemi is measuring agglutination or lack thereof by concentrating unreacted cells and allowing agglutinated cells to spread evenly over a slanted surface. There is no concentration of reacting/agglutinating cells contacting the slanted surface. Furthermore, the agglutinated cells must be spread over the entire surface in order for the Suovaniemi method to be operable. This is all very different from the present invention which uses a first slanted surface (a feature not used by Suovaniemi) to concentrate the particles (an opposite feature, contrary to Suovaniemi) which subsequently contact the second surface where some but not all of the particles are concentrated (opposite from Suovaniemi). As if these differences were not enough, Suovaniemi's cells sediment by force of gravity, not centrifugation whereas claim 8 recites the particles are viruses (the exemplified most preferred embodiment). Viruses generally do not sediment under force of gravity but require centrifugation forces (and usually ultracentrifugation forces) sufficient to pellet both agglutinated and non-agglutinated cells so that visually they appear the same. This makes the Suovaniemi et al method inoperable. Still further Suovaniemi wants the cells to sediment to the bottom. There would be no purpose to having a density gradient (as claimed in claim 5) in Suovaniemi and if such a gradient were present and functioning, the Suovaniemi method would be inoperable.

Anderson et al (applicant's unrelated patent) is not attempting to immobilize particles on any surface and to do so would make the Anderson et al method inoperable. Anderson et al concentrates and localizes their particles using a density gradient. The particles are concentrated in the bottom-most region of the vessel, not on a slanted surface in the middle of the vessel. Suovaniemi attempts to spread out the agglutinated particles

whereas Anderson et al attempts to concentrate the particles. These purposes are at odds with each other.

Any combination of Suovaniemi and Anderson et al cannot suggest the present invention for several reasons. Modifying the Suovaniemi system using the Anderson et al slanted solid phases is not suggested or practical because the Suovaniemi method cannot be performed in the Anderson et al apparatus because both agglutination and non-agglutination would appear the same, a pile of cell at the bottom of the thin lowermost chamber. Secondly, the Anderson et al method cannot be used in the Suovaniemi system because there will be no concentration of viruses.

At least six different claimed concepts are completely missing from either reference and cannot be readily assumed to be obvious without a reference. First, the concept of having binding agents immobilized on a small distinct part of the surface is not mentioned. Second, there is no mention of using no plural binding agents (claim 2), each binding to different species of particles. Third, there is no mention of having different regions on the surface coated with different binding agents (claim 3). Fourth, the first slanted surface never has a different binding agent from the second slanted surface (claim 29) regardless of what surfaces one is talking about. Fifth, a binding agent is never free in solution, much less added to the particles before sedimentation or after they are bound (claim 9). Sixth, both slanted surfaces do not cross a single sedimentation path (claim 30).

Since no possible operable combination of the references suggests the claimed invention, this rejection should be withdrawn.

CONCLUSIONS

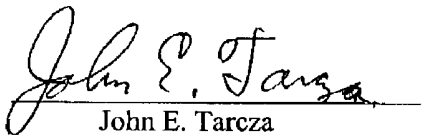
In view of the amendments and comments above, the rejections have been overcome. Reconsideration, withdrawal of the rejections and early indication of allowance are respectfully requested.

If needed, applicants petition for an extension of time under the provisions of 37 CFR 1.136(a) for sufficient time to accept this response. The commissioner hereby is authorized to charge payment of any fees under 37 CFR § 1.17, which may become due in

connection with the instant application or credit any overpayment to Deposit Account No.500933.

Respectfully submitted,

Date: July 20, 2004



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